

REMARKS

Reconsideration of the application is requested in view of the above amendments and the following remarks. Claims 8-11, 27 and 50-55 have been cancelled without prejudice or disclaimer as being drawn to a nonelected invention. Claims 32, 35, 40, 41 and 49 have also been cancelled without prejudice or disclaimer. Claims 1, 12, 21-23, 28, 34-36, 39, 42 and 45 have been amended and are fully supported by the figures of the application as well as at least page 7, lines 3-8, page 9, line 16 to page 10, line 5, and page 14, lines 20-24 of the specification. Changes made to the claims by the current amendments are shown in the attached Version With Markings To Show Changes Made.

Objections and § 112 Rejections

Applicants affirm the election of claims 1-7, 12-26 and 28-49 for further prosecution on the merits. Nonelected claims 8-11, 27 and 50-55 have been cancelled as being drawn to a nonelected invention.

Claims 32, 33 and 35-38 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claim 2 has been cancelled, rendering the rejection of claims 32 and 33 moot. Claim 36 has been amended to address the misspelling of the term “gear.” Withdrawal of the rejection is respectfully requested.

Provisional Rejection

Claims 1-7, 12-26 and 28-49 were provisionally rejected under 35 U.S.C. § 101 as claiming the same invention as found in the identically numbered claims in copending Application No. 09/966926. Applicant has concurrently filed a Preliminary Amendment and Response in the 09/966926 Application that cancels at least claims 1-7, 12-26 and 28-49 in that application. Therefore, the provisional rejection of pending claims 1-7, 12-26 and 28-49 of the present application has been rendered moot. Withdrawal of the rejection is respectfully requested.

§ 103 Rejections

Claims 1-5, 12-28, 21, 22, 28-34, 35, 36-39, 44, 45 and 47-49 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bombardier, U.S. 3,698,497 in view of Avramidis et al., U.S. 3,884,097. Applicants respectfully traverse this rejection.

Bombardier fails to disclose a planetary gear system. Avramidis discloses a planetary gear system that includes a sun gear 150 mounted on an output/input shaft 32, planetary gears 152 mounted in a planetary gear carrier 174, and a hollow shaft 190 to which an output sprocket 156 is mounted. The output sprocket 156 receives a chain 158 which drives the snowmobile track through a sprocket 160, shaft 162, and track sprocket 164 (see Figures 1 and 2 and column 5, lines 7-16 of Avramidis).

Avramidis discloses that the planet gear carrier 174 may be fixed or free to rotate relative to sun gear 150 depending on the position of levers 168, 184 and 206. In particular, Avramidis discloses configurations numbered 5-7 in Tables C, D and E in which the planet gear carrier 174 is disconnected from input/output shaft 32 and sun gear 150 so as to hold the planetary gears 152 from rotating about sun gear 150. Thus, Avramidis fails to disclose a sun gear driven by a first shaft means, and planetary gears continuously rotating about the sun gear when the sun gear is driven by the first shaft means, as required by claims 1, 12, 28 and 36.

Avramidis also discloses a ring gear 154 mounted to a ring gear carrier 180. Ring gear 154 is engaged by planet gears 152. Ring gear carrier 180 can be either fixed so as not to rotate relative to sun gear 150 and planet gears 152, or may be free to rotate about sun gear 150 and planet gears 152. Avramidis discloses configurations 1 and 2 in Tables C, D, E that require ring gear 154 to be disconnected from output sprocket 156 and held stationary, while in configurations 3 and 4 of Tables C, D, E ring gear 154 is disconnected from output sprocket 156 and allowed to rotate relative to sun gear 150 and planet gears 152. Whether or not ring gear 154 is allowed to rotate depends upon the position of levers 184 and 206. Levers 184 and 206 affect the engagement or disengagement of ring gear carrier 180 from stationary frame member 198 and flange 194, and determine in part whether or not planet gear carrier 174 is stationary or fixed relative to sun gear 150. Because Avramidis requires a ring gear that is movable, Applicants

submit that Avramidis fails to disclose a ring gear being fixed relative to the sun gear and planetary gears, as required by claims 21 and 34.

Bombardier and Avramidis also fail to disclose or suggest a planetary gear system having an input shaft and a second shaft, wherein the engine drive shaft drives the input shaft and the second shaft drives the track shaft, and the input and the second shaft are coaxial with a longitudinal axis of the track shaft, as required by claim 39. Bombardier and Avramidis further fail to disclose or suggest a snowmobile with a drive train that includes a planetary gear system having an input shaft and a second shaft coaxial with the input shaft, wherein the input shaft is driven by the engine and the second shaft is driven by the input shaft with a gear reduction from the input shaft to the second shaft, and a sprocket that rotates about an axis of an endless track drive shaft positioned within the endless track of the snowmobile, wherein the sprocket is coaxially connected to and driven the second shaft, as required by claim 45.

As discussed above, Bombardier fails to disclose a planetary gear system. Avramidis discloses an engine drive shaft 24 that is coaxial with and drives an output/input shaft 32 and a hollow shaft 190 to which an output sprocket 156 is secured. The output sprocket 156 receives chain 158, which drives the snowmobile track by a sprocket 160, shaft 162, and track sprocket 164 that are not coaxially aligned with the output/input shaft 32 and hollow shaft 190. Therefore, Bombardier and Avramidis fail to disclose or suggest every limitation of claims 39 and 45.

Claims 6, 7, 19, 20, 23-26, 35 and 46 were rejected under 35 U.S.C. § 103(a) as unpatentable over Bombardier in view of Avramidis, and further in view of Showalter, U.S. 5,833,566. Applicants respectfully traverse this rejection. Claim 35 has been cancelled, rendering this rejection moot as to that claim. As discussed above Bombardier and Avramidis fail to disclose or suggest every limitation of claims 1, 12, 21 and 45. Showalter fails to remedy the deficiencies of Bombardier and Avramidis as they relate to claims 1, 12, 21 and 45. Therefore, claims 6, 7, 19, 20, 23-26 and 46 are allowable for at least the reason they are dependant upon an allowable base claim. Applicants do not concede the correctness of this rejection.

Claims 40 and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bombardier in view of Avramidis and Showalter, and further in view of Illerhaus, U.S. 6,086,504. Applicants respectfully traverse this rejection. Claims 40 and 41 have been cancelled, rendering this rejection moot as to those claims. Applicants do not concede the correctness of this rejection.

Claims 42 and 43 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bombardier in view of Avramidis, Showalter and Illerhaus, and further in view of Lykken, U.S. 5,924,503. Applicants respectfully traverse this rejection.

As discussed above Bombardier and Avramidis fail to disclose or suggest every limitation of claim 39. Showalter, Illerhaus and Lykken fail to remedy the deficiencies of Bombardier and Avramidis as they relate to claims 42 and 43. Therefore, Applicants submit that claims 42 and 43 are allowable for at least the reason they are dependant upon an allowable base claim. Applicants do not concede the correctness of this rejection.


In view of the above, Applicants request reconsideration of the application in form of a Notice of Allowance.



Date 2/19/03

Respectfully submitted,

MERCHANT & GOULD P.C.
P. O. Box 2903
Minneapolis, Minnesota 55402-0903
612.332.5300



Joshua N. Randall
Reg. No. 50,719
JNR:ae

Version With Markings To Show Changes Made

Please cancel claims 8-11, 27, 32, 35, 40, 41 and 50-55 without prejudice or disclaimer.

Please amend claims 1, 12, 21-23, 28, 34-36, 39, 42 and 45 as follows:

1. (Once Amended) A snowmobile comprising:

a frame having a forward portion and a rear portion, said frame including a pair of skis supporting said forward portion and an endless drive track supporting said rear portion, an engine supported in said frame, a drive train connected to said engine and to said endless drive track, said drive train including a planetary gear system, said planetary drive system including a first shaft means and a sun gear driven by said first shaft, said first shaft means being driven by said engine, planetary gears drivenly engaged with said sun gear, said planetary gears continuously rotating about said sun gear when said sun gear is driven by said first shaft means, and second shaft means including means engaged with said planetary gears, said second shaft means being driven by said planetary gears, said second shaft means driving said endless drive track.

12. (Once Amended) A snowmobile comprising:

a frame having a forward portion and a rear portion, said frame including a pair of skis supporting said forward portion and an endless drive track supporting said rear portion, an engine supported in said frame, a drive train connected to said engine and to said endless drive track, said drive train including a reduction drive comprising a planetary gear system, said planetary drive system including a first shaft means and a sun gear driven by said first shaft means, said first shaft means being driven by said engine, planetary gears drivenly engaged with said sun gear, said planetary gears continuously rotating about said sun gear when said sun gear

is driven by said first shaft means, and second shaft means including ring gear means engaged with said planetary gears, said second shaft means driving said endless drive track.

21. (Once Amended) A snowmobile including
an engine with a drive shaft;
[a differential and a] an endless track;
an endless track shaft positioned within the endless track that drives the endless track;
a planetary gear system interconnecting said engine drive shaft and said [differential]
endless track shaft, said planetary gear system including a sun gear driven by said engine drive
shaft, planetary gears driven by said sun gear, and a ring gear engaging said planetary gears and
being fixed relative to said sun gear and said planetary gears.

22. (Once Amended) The snowmobile of claim 21 [wherein said planetary gear system comprises a sun gear, a plurality of planetary gears and a ring gear,] wherein said planetary gears serve to provide driving power from said sun gear to said ring gear.

23. (Once Amended) The snowmobile of claim 22 wherein said sun gear is integrally mounted on [the] said engine drive shaft [of said engine].

28. (Once Amended) A snowmobile comprising:
a frame having a forward portion and a rear portion, said frame including a pair of skis supporting said forward portion and an endless drive track supporting said rear portion, an engine supported in said frame, a drive train connected to said engine and to said endless drive track, said drive train including a primary clutch, a secondary clutch and a planetary gear system, said primary clutch and said secondary clutch being interconnected by a belt, said planetary drive system including a first shaft means and a sun gear driven by said first shaft means, said first shaft means being driven by said engine through said primary clutch, said belt, and said

secondary clutch, said planetary gears being drivenly engaged with said sun gear, said planetary gears continuously rotating about said sun gear when said sun gear is driven by said first shaft means, and second shaft means including means engaged with said planetary gears, said second shaft means being driven by said planetary gears, said second shaft means driving said endless drive track.

34. (Once Amended) A snowmobile comprising:

a frame having a forward portion and a rear portion, said frame including a pair of skis supporting said forward portion and an endless drive track supporting said rear portion, an engine supported in said frame, a drive train connected to said engine and to said endless drive track, said drive train including a clutch system, said clutch system including a reduction drive comprising a planetary gear system, said planetary drive system including a first shaft means and a sun gear driven by said first shaft means, said first shaft means being directly driven by said engine, planetary gears drivenly engaged with said sun gear, and second shaft means including ring gear means engaged with said planetary gears, said ring gear being fixed relative to said sun gear and said planetary gears; primary clutch means driven by said second shaft means, secondary clutch means and belt means providing driving engagement between said primary clutch means and said secondary clutch means, said secondary clutch means serving to drive said endless track.

36. (Once Amended) A snowmobile comprising:

a frame having a forward portion and a rear portion, said frame including a pair of skis supporting said forward portion and an endless drive track supporting said rear portion, an engine supported in said frame, a drive train connected to said engine and to said endless drive track, said drive train including a planetary [gar] gear system, primary clutch and a secondary

clutch, said primary clutch and said secondary clutch being interconnected by a belt, said planetary drive system including a first shaft means and a sun gear driven by said first shaft means, said first shaft means being driven by said engine, said planetary gears being drivenly engaged with said sun gear, said planetary gears continuously rotating about said sun gear when said sun gear is driven by said first shaft means, and second shaft means including means engaged with said planetary gears, said second shaft means being driven by said planetary gears, said second shaft means driving said endless drive track through said primary clutch and said secondary clutch.

39. (Once Amended) A snowmobile comprising:

(a) a frame having a forward portion and a rear portion, said frame including a ski supporting said forward portion, and said frame including an endless drive track;

(b) an engine supported in said frame;

(c) a drive train connected to said engine and to said drive track, wherein said drive train comprises:

(i) an engine drive shaft capable of being rotated by the engine, the engine drive shaft having a first longitudinal axis;

(ii) a track shaft having a second longitudinal axis;

(iii) a sprocket coupled to the track shaft wherein rotation of the track shaft causes rotation of the sprocket, and wherein the sprocket drives the endless drive track;

(iv) a continuously variable transmission connecting the engine drive shaft to the track shaft wherein the engine drive shaft drives the track shaft through the continuously variable transmission; and

(v) a planetary gear system having an input shaft and a second shaft, wherein the engine drive shaft drives the input shaft and the second shaft drives the track shaft, wherein the input shaft and the second shaft are coaxial with [one of the axes selected from the group consisting of the first longitudinal axis and] the second longitudinal axis, wherein there exists a gear reduction from the input shaft to the second shaft.

42. (Once Amended) The snowmobile according to claim 39, [wherein the input shaft and the second shaft are coaxial with the second longitudinal axis, and] wherein the input shaft is connected to and driven by the continuously variable transmission, and wherein the second shaft is connected to and drives the track shaft.

45. (Once Amended) A snowmobile comprising:

(a) a frame having a forward portion and a rear portion, said frame including a ski supporting said forward portion, and said frame including an endless drive track;

(b) an engine supported in said frame; and

(c) a drive train connected to said engine and to said endless drive track, wherein said drive train comprises:

(i) a planetary gear system including a input shaft and a second shaft coaxial with the input shaft, wherein the input shaft is driven by the engine and the second shaft is driven by the input shaft with a gear reduction from the input shaft to the second shaft; and

(ii) a sprocket that rotates about an axis of a endless track drive shaft positioned within the endless track, wherein the sprocket is coaxially connected to and driven by the second shaft, and wherein the sprocket drives the endless drive track.